EPA United States Environmental Protection Agency

in partnership with

Louisiana Department of Environmental Quality

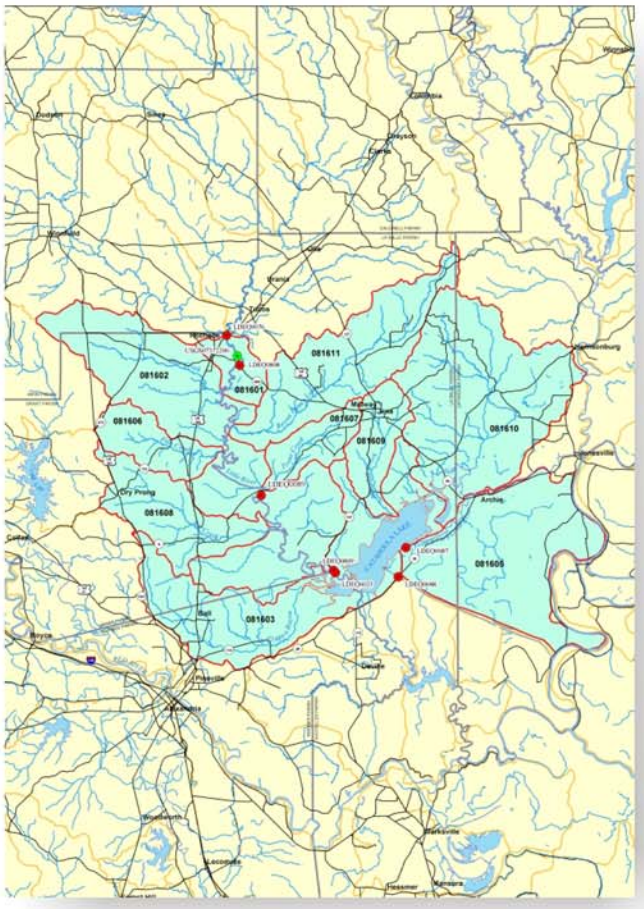
Mercury TMDLs for the Little River/Catahoula Lake Watershed

Water Quality in Little River/Catahoula Lake

The state of Louisiana requires that the water quality in Little River/Catahoula Lake be "fishable and swimmable". However, on November 20, 2000 the Louisiana Department of Environmental Quality (LDEQ), Department of Health & Hospitals, and Department of Wildlife & Fisheries jointly issued a fish consumption advisory for portions of the Little River/Catahoula Lake Watershed because of elevated levels of mercury found in fish tissue. Mercury is an element that is emitted and cycled in the environment through both natural processes and human activities. It is highly toxic, persistent, and bioaccumulates in the food chain. Health risks associated with exposure to elevated mercury levels, primarily through the consumption of fish, have been found to be greater in the developing fetus and young children.

In response to these conditions, a total maximum daily load (TMDL) project has been initiated to determine the measures necessary to protect human health and remove the fish consumption advisories for Little River and Catahoula Lake. The goal of the TMDL is to determine the pollutant loading a body of water can assimilate and still support its beneficial uses. The load is then allocated among all potential sources of mercury within the watershed and the airshed, and measures to reduce pollutant loads are developed as necessary.

To learn more about Louisiana water quality standards and monitoring efforts, read LDEQ's *Mercury Contaminant Study*, available on the Web at www.deq.state.la.us/surveillance/mercury. For general information about how TMDL projects are structured, read the *Louisiana TMDL Process Information*, also available on the Web at www.deq.state.la.us/technology/tmdl/index.htm The *U.S. EPA's Mercury Web Site* (www.epa.gov/mercury/index.html) also provides information on mercury and what's being done to protect human health.



Little River/Catahoula Lake Watershed

Summary Table

Subsegments on LDEQ 303(d) List	081602, 081603, 081605
Parameters of Concern	Fish Consumption Advisory for Mercury
Project Goal	Rescind Fish Consumption Advisory
Size of Watershed	1,334 square miles
Land Use/Cover	Primarily Forest and Agriculture

Description of Little River/Catahoula Lake

The TMDL study area includes the 58.25 mile segment of Little River from Highway 500 near Georgetown to Catahoula Lake, all of Catahoula Lake (18,797 acres), and the 11-mile reach of Little River (French Fork) from the lake to the dam near Archie. The following subsegments are included in the TMDL study area:

- 081601 - Little River, confluence of Castor Creek and Dugdemona River to Junction with Bear Creek
- 081602 - Little River, from Bear Creek to Catahoula Lake
- 081603 - Catahoula Lake
- 081605 - Little River, from Catahoula Lake to dam at Archie
- 081606 - Fish Creek, headwaters to Little River
- 081607 - Trout Creek, headwaters to Little River
- 081608 - Big Creek, headwaters to Little River
- 081609 - Hemphill Creek, headwaters to Catahoula Lake, including Hair Creek
- 081610 - Old River, Catahoula Lake to Little River
- 081611 - Bayou Funny Louis, headwaters to Little River

Since atmospheric deposition of mercury is addressed in this TMDL, an area extending a distance of 100 kilometers out from the Little River/Catahoula Lake watershed, otherwise referred to as the "airshed", has also been evaluated. The watershed includes portions of the following parishes: Catahoula, Grant, La Salle, Rapides, and Winn.

TMDL Development Process

USEPA Region 6 worked with a contractor, Parsons, and LDEQ to develop these TMDLs for Little River/Catahoula Lake. The contractor was chosen through a competitive process in which companies responded to an open request for proposals.

The project was initiated in June 2002. It began with an evaluation of all available fish tissue, sediment and water data, air release and deposition data contributing to the within the watershed and airshed, point source discharge data, and geologic data. Mercury contributions to the Little River/Catahoula Lake Watershed were calculated based on an annual mass balance approach. EPA's BASINS Version 3 was used to simulate watershed mercury loading to the Little River, Catahoula Lake, and their tributaries. Wet deposition rates were derived from the National Atmospheric Deposition Program Mercury Deposition Network data available from four Louisiana sites. Available data indicates that there are no natural sources of mercury in the geology throughout the watershed.

The estimated current mercury load to the watershed is 164.76 lbs/yr. This mercury load must be reduced by 53.38 lbs/yr to an allowable loading of 111.38 lbs/year. For this TMDL, the load is allocated between point and non-point sources as shown below. EPA did not consider seasonal variability since the data did not show seasonal trends and because bioaccumulation in fish occurs over several years. A variety of conservative assumptions in the TMDL calculation allowed the use of an implicit Margin of Safety (MOS). The TMDL authorizes re-allocation of the individual WLAs among point sources and indeed assumes that this will occur, but only to the extent that the sum of re-allocated loads remain at or below the sum of the original individual WLAs (sometimes described here as the cumulative WLA). USEPA established this TMDL under the assumption that most wastewater facilities are discharging at or below 12 ng/l. The percent reductions and relative loading levels are predicated on this assumption. USEPA will work with LDEQ to establish mechanisms for demonstration that these loads are being met. Mechanisms that could be used to demonstrate compliance may include a certification process demonstrating that there are no known or suspected operations that could reasonably be expected to discharge mercury.

TMDL Calculations (lbs/yr)

Current Estimated Loading	164.76
Wasteload Allocation	0.76
Load Allocation	110.62
Margin of Safety	0
TMDL	111.38

TMDL Development Timeline

Start Date: **June 2002**
Public Comment Period: **December 2002**
TMDL Revisions and Response to Public Comment: **January 2003**
EPA Region 6 approval: **February 2003**

For More Information

For more information on these or other Louisiana TMDLs, contact the staff listed below:

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